



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,638	09/12/2003	Katsuhisa Yamazaki	02910.000079.	7561
5514	7590	09/09/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			DOE, JANIS L	
		ART UNIT	PAPER NUMBER	
		1756		
DATE MAILED: 09/09/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/660,638	YAMAZAKI ET AL.
	Examiner Janis L. Dote	Art Unit 1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 19 December 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-17 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 12 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/31/03</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p) (5) because they include the following reference character(s) not mentioned in the description:

In Fig. 2, the reference characters **2b**, **SW**, **S_{DC}**, **S_{AC}**, **B**, **A**, and **M**.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The abstract of the disclosure is objected to because it is not limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

Applicants are reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in

deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The disclosure is objected to because of the following informalities:

(1) There appears to be a number of typographic errors throughout the specification. For example, at page 28, line 27, the term "thec" in the phrase "adding thec to the toner particles" (emphasis added). This example is not exhaustive. Applicants should review the entire specification to correct the typographic or spelling errors.

(2) The use of trademarks, e.g., Henschel mixer [HENSCHEL MIXER] at page 29, line 11, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any

manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 16, the recitation "a weight average particle diameter of the developer is 3 μm or more and 12 μm or less" lacks antecedent basis in the specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in the phrases "rate of liberation 'a' . . . is 40 to 95%" and "rate of liberation 'b' . . . is

0.1 to 5%," because it is not clear what is meant by the term "rate of liberation." The specification at pages 25, line 5, to page 27, line 2, discloses that the number of inorganic powder or conductive powder liberated from the toner particles is determined from the number of light emissions of "only atoms" associated with the inorganic or conductive powder, such as Si, measured by the particle analyzer PT1000. The number of inorganic or conductive powder present on the surface of the toner particles is determined from the number of light emissions of atoms, such as Si, which are emitted simultaneously with light emissions of carbon atoms that are associated with the toner particles, measured by the particle analyzer PT1000. However, the specification does not define what is meant by the term "rate of liberation." It is not clear whether the term refers to a percentage of the number of light emissions of "only atoms" associated with the inorganic or conductive powder with respect to only the number of light emissions of atoms associated with the inorganic or conductive powder, which is emitted simultaneously with the light emissions of carbon atoms associated with the toner particles, or to a percentage of the number of light emissions of "only atoms" with respect to the sum of the number of light emissions of atoms, which are emitted

simultaneously with the light emissions of carbon atoms and the number of light emissions of "only atoms."

Claim 4 is indefinite because it is missing a terminal period. It is not clear whether the claim is complete.

7. In the interest of compact prosecution, the examiner has interpreted the "rate of liberation" recited in instant claim 1 as referring to a percentage of the number of light emissions from only the particular atoms (i.e., atoms associated with the inorganic or conductive powder liberated from the toner particles) with respect to the sum of the number of light emissions from only the particular atoms and the number of light emissions of the particular atoms, which are emitted simultaneously with light emissions of carbon atoms associated with the toner particles (i.e., atoms associated with the inorganic or conductive powder that are present on the surface of the toner particles). Rejections based on this interpretation are set forth infra.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 5, and 7-16 are rejected under 35 U.S.C. 102(b) as being anticipated by US 2001/0028988 A1 (Magome).

Magome discloses a developer comprising 100 parts by weight of toner particles, 1.0 part by weight of hydrophobic silica particles, and 1.5 parts by weight of conductive zinc oxide particles. See paragraphs 0403-0409, 0486, and 0487; and Table 3 in paragraph 0632, toner 26. The rate of liberation of

the hydrophobic silica particles is 2.18%. The rate of liberation of the conductive zinc oxide particles is 53.6%. The rate of liberation is defined as a percentage of the number of light emissions of "only metal" atoms associated with the silica or conductive powder, determined by the particle analyzer PT1000 with respect to the sum of the number of light emissions of the metal atoms "having emitted light simultaneously with carbon atoms" associated with the toner particles determined by the particle analyzer PT1000 and the number of light emissions of "only metal" atoms. See paragraphs 0249 and 0254. The rates of liberation of the hydrophobic silica particles and conductive particles are within the ranges of 0.1 to 5% and 40 to 95%, respectively, recited in instant claim 1.

The toner particles comprise a binder resin and magnetic iron oxide particles as the colorant. The toner particles has a weight average particle diameter of 7.3 μm . The toner meets the toner limitations recited in instant claims 1 and 16. The hydrophobic silica particles have a number average particle diameter (Db) of 9 nm, and were treated first with hexamethyldisilazane and then with a silicone oil. Paragraph 0409. The hydrophobic silica particles meet the inorganic fine particle limitations recited in instant claims 11-15. The conductive zinc oxide particles are

agglomerates of zinc oxide particles, where the agglomerates have a volume average particle diameter (Da) of 2.6 μm . The conductive zinc oxide particles have a resistivity of 1,500 $\Omega\cdot\text{cm}$. Paragraph 0396. The conductive zinc oxide particles meet the conductive fine particle limitations recited in instant claims 5 and 7-10. The volume average particle diameter Da of 2.6 μm (i.e., 2,600 nm) and the number average particle diameter Db of 9 nm satisfy the relationship $\text{Da} \geq 10\text{Db}$ recited in instant claim 1.

12. Claims 2-4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Magome.

Magome discloses a developer as described in paragraph 11 above, which is incorporated herein by reference.

Magome does not discloses that its developer has the wettability as recited in instant claims 2-4. The instant specification at page 30, lines 6-9, discloses that the wettability of the developer is "largely affected by an attachment condition of the inorganic fine particle on the surface of toner particle." As discussed in paragraph 11 above, Magome's developer meets the compositional and physical

limitations recited in instant claim 1, from which claims 2-4 depend. The developer disclosed by Magome also exhibits rates of liberation of the hydrophobic silica particles and conductive zinc oxide particles that are within the rates of liberation ranges recited in instant claim 1. Thus, it is reasonable to presume that the developer disclosed by Magome has the wettability as recited in instant claims 2-4. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

13. Claim 16 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Magome.

Magome discloses a developer as described in paragraph 11 above, which is incorporated herein by reference.

Instant claim 16 is written in product-by-process format. Magome does not exemplify making a developer "by adding the inorganic fine particle to the toner particle and then adding the conductive fine particle thereto" as recited in instant claim 17. Rather, Magome discloses mixing both the hydrophobic silica and conductive zinc oxide with the toner particles in a HENSCHEL MIXER. Paragraphs 0409 and 0487. However, as discussed above, toner 26 in Magome meets the compositional and

physical limitations recited in the instant claims.

Accordingly, toner 26 in Magome appears to be the same or substantially the same as the developer made by the method recited in the instant claims. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magome combined with US 5,370,957 (Nishikiori) and US 6,709,798 B2 (Tamaoki).

Magome discloses a developer as described in paragraph 11 above, which is incorporated herein by reference.

As discussed in paragraph 11, toner 26 in Magome comprises conductive zinc oxide powder. However, Magome does not disclose that the conductive zinc oxide powder is subjected to a hydrophobic treatment as recited in instant claim 6.

Nishikiori discloses that "for optimizing an optimal image quality, a treatment for improving the frictional charging property, such as a treatment of increasing or decreasing the conductivity and a hydrophobic treatment may be applied to the surface of" conductive particles used as surface additives in toners. Col. 6, lines 44-49. Tamaoki discloses that "[f]rom the perspective of heat resistance storage characteristics and

environmental stability, it is desirable that inorganic particles, and particularly . . . zinc oxide [post-processing agents added to facilitated fluidity and cleaning of the toner] and the like, are subjected to surface processing by known methods using processing agents such as hydrophobic processing agent[s] such as silane coupling agent . . . silicon [sic] oil, silicon [sic] wax . . . modified silicon [sic] oil and the like." Col. 9, lines 35-37 and 47; and col. 9, line 64, to col. 10, line 7.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Nishikiori and Tamaoki, to hydrophobically treat the conductive zinc oxide powder as recited in instant claim 6 in toner 26 of Magome, because that person would have had a reasonable expectation of successfully obtaining a toner that has improved heat resistance storage characteristics, environmental stability, and frictional charging characteristics, and that provides images with optimal image quality.

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed.

Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claims 1, 8, 9, and 13-16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-34 of U.S. Patent No. 6,596,452 B2 (Magome).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter recited in the claims of Magome renders obvious the instantly claimed invention.

Reference claim 26, which depends from reference claim 22, which in turn depends from reference claim 1, recites a magnetic toner comprising magnetic toner particles having a weight-average particle diameter of 3 to 10 μm , and a conductive fine powder having a volume average particle diameter smaller than the toner weight-average particle diameter. The magnetic toner comprises a binder resin and a magnetic iron oxide. Claim 26 further recites that the conductive fine powder is at a

liberation percentage of from 5.0 to 50.0%. The liberation percentage of the conductive fine powder is defined as percentage of the number of light emissions of only the metal atoms in the conductive powder determined by the particle analyzer PT1000 with respect to the sum of the number of light emissions of metal atoms having emitted light simultaneously with carbon atoms of the toner particles determined by the particle analyzer PT1000 and the number of light emissions of only the metal atoms. See col. 41, lines 38-54. The magnetic toner meets the toner limitations recited in instant claims 1 and 16. The liberation percentage of 50% of the conductive fine powder is within the range of 40 to 95% recited in instant claim 1. Reference claims 23 and 24, which depend from reference claim 22, recite that the conductive fine powder further has a resistivity that meets the resistivity ranges recited in instant claims 8 and 9, respectively.

Reference claim 20, which depends from reference claim 16, which depends from reference claim 14, which in turn depends on reference claim 1, recites that the magnetic toner further comprises silica fine powder, as the inorganic fine powder, where the silica fine powder has a number average particle size of 4 to 80 nm. The magnetic toner has a liberation rate of silica powder of from 0.1 to 2.0%. The liberation percentage of

the silica fine powder is defined as percentage of the number of light emissions of only Si atoms of the silica powder determined by the particle analyzer PT1000 with respect to the sum of the number of light emissions of Si atoms having emitted light simultaneously with carbon atoms of the toner particles determined by the particle analyzer PT1000 and the number of light emissions of only Si atoms. See col. 40, lines 30-47. The liberation percentage range of silica powder is within the range of 0.1 to 5% recited in instant claim 1. The silica fine powder meets the inorganic fine powder limitations recited in instant claims 14 and 15. Reference claims 17 and 18, which depend from reference claim 14, recite that the inorganic fine powder is treated with a silicone oil or with a silane compound and then with a silicone oil, as recited in instant claims 13 and 14, respectively.

The reference claims do not explicitly recite that the volume average particle size of the conductive fine powder is greater than or equal to 10 times the number average particle diameter of the silica fine powder as recited in instant claim 1. However, as discussed above, reference claim 22 recites that the volume average particle size of the conductive fine powder is smaller than the weight average particle size of 3 to 10 μm . Thus, for example, if the volume average particle

size is smaller than 3 μm , i.e., 2 or 1 μm (i.e., 2000 or 1000 nm), the volume average particle size of the conductive fine powder would be more than 10 times greater than the number average particle diameter of 4 to 80 nm recited in reference claim 16.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Magome, to make and use a magnetic toner that meets the compositional and physical limitations recited in the instant claims because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that is capable of forming toner images in an electrophotographic method.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Art Unit: 1756

Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Sep. 4, 2004

Janice L. Date
JANICE L. DATE
PRIMARY EXAMINER
GROUP 1600
1700